GENOMIC POLYMORPHISM FOR PREDICTING THERAPEUTIC RESPONSE

ABSTRACT

The present invention relates to the use of genomic polymorphism to provide individualized therapeutic regimens to treat patients suffering from diseases such as cancer. The invention discloses methods for determining the efficacy or choice of chemotherapeutic drugs and regimens for use in treating a diseased patient by associating genomic polymorphism with the effectiveness of the drugs or regimens, or by associating genomic polymorphism with the intratumoral expression of a gene whereby the gene expression affects effectiveness of the drugs or regimens. In particular, the present invention provides novel methods for screening therapeutic regimens, which comprise determining a patient's genotype at a tandemly repeated 28 base pair region in the thymidilate synthase (TS) gene's 5' untranslated region (UTR). Patients homozygous for a triple repeat will be least successfully treated with a thymidylate synthase directed drug, while those heterozygous for a triple and a double repeat will be more successfully treated, and those homozygous for a double repeat will be even more successfully treated. Those patients homozygous for the double repeat will likely suffer the least side effects from thymidylate synthase directed drugs such as 5-FU.